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ABSTRACT

Content and critical analyses of 40 speed reading books were undertaken to determine to what extent discussion and teaching reflected current research. Particular attention was given to the information provided on eye movements, span of recognition, and the upper rates of speed attainable through practice. Content analysis revealed the following: (1) 72% of the 32 books that dealt with the span of recognition encouraged readers to process phrases of three or fewer words in a single fixation, while 28% discussed expanding the field of vision to include clusters larger than three words as well as entire lines or large blocks of print; (2) 15% of the 27 books in which eye regressions were discussed indicated that they were useful in some cases, while 52% advocated the total elimination of regressions; and (3) 57% of the 28 speed reading books reporting upper rates of reading proposed rates above 1,000 words per minute (WPM). However, it is concluded that research supports the following: readers have a span of recognition physiologically fixed at about two or three words, regressions are sometimes necessary and useful, and rates above 1,000 wpm are not achieved with what is usually thought of as normal reading; skimming or scanning are employed instead. In an effort to improve speed reading books, collaboration between researchers and writers is recommended. (A list of all 40 speed reading books is appended, as are the references upon which the criticisms were based.) (HOD)

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Technical Report 86-04

A Content and Critical Analysis of
Forty Speed-Reading Books

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Abstract

The content analysis reported in this article focuses on eye movements, span of recognition, and rates of reading as discussed and practiced in forty speed-reading books published from the 1950's through 1985. Relevant research is brought to bear on the findings of the content analysis.

The content analysis revealed several interesting findings. First, 72% of the speed-reading books encouraged readers to process phrases of three or fewer words in a single fixation--a finding supported by recent research findings. Many other books, however, discussed how readers could expand their field of vision to include clusters larger than three words as well as entire lines or large blocks of print. The available research evidence refutes such possibilities.

Although regressions occur naturally in the reading process, only four (14%) of the 27 books in which eye regressions were discussed indicated that they were useful in some cases. Most of these books (52%) advocated the total elimination of regressions--a suggestion that is impossible to follow.

According to the best recent empirical evidence available, reading rates above 1,000 Wpm are not realistic if genuine reading is to occur. Of the 28 speed-reading books reporting upper rates of reading, the majority (57%) proposed rates above

1,000 Wpm.

Because of numerous instances in which various speed-reading books were not sensitive to well-grounded, empirical evidence, the investigators urge a cooperative effort among authors, editors, and instructors to produce speed-reading books that are more in line with available research evidence.

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A Content and Critical Analysis of Forty Speed-Reading Books

In 1925 William S. Gray summarized the then current literature related to speed of reading. He concluded that: (1) speed may be increased through various methods; and (2) significant increases in speed may be made without hindering comprehension. Among a long list of effective speed reading exercises was training the eyes to increase span of recognition, or the amount of information an individual can see and process in a single glance. These promising findings, along with the results of studies in the 1930's, 1940's and 1950's (Berger, 1966; Karlin, 1958), contributed to the proliferation of speed reading books which, as evidenced by the number of current titles, continues today. Yet as early as 1965, Bliesmer cited many weaknesses of speed reading studies including scanty statistical evidence, rare use of control groups, and when in evidence, definite statistical support given only for speed and not comprehension. Bliesmer's last concern has been observed in more recent studies (Collins, 1979; Fleisher, Jenkins & Pany, 1979). According to Carver (1985), most studies used to support speed reading programs and techniques are of "extremely poor scientific quality" (p. 390).

Meanwhile, within the last decade, compelling evidence has been accumulating which suggests that the span of recognition is relatively fixed and limited (McConkie & Rayner, 1976; O'Regan,

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1980; Rayner, 1978; Underwood & McConkie, 1985). Other evidence sets a definite speed ceiling for even the fastest readers (Carver, 1985, 1983, 1982; Homa, 1983; Spache, 1976).

In light of these new research findings, an investigation of the content of new and extant speed reading books was undertaken. In particular, we were concerned with information provided by the books related to eye movements, including span of recognition, and the upper rates of speed attainable through practice of the techniques advocated. To this end, a content analysis of 40 speed-reading books, from the 1950's to the present, was conducted and the results were compared with recent empirical findings from studies related to span of recognition, regressions, and rates of reading.

Description of the Content Analysis

A content analysis is an intense systematic scrutiny of a given piece of printed instructional material (Borg & Gall, 1979). Content-analysis research has been a useful method of determining the quantity and quality of instructional elements in material designed to teach and improve reading (Beck, McKeown, McCaslin & Burkes, 1979; Durkin, 1981; Stahl, Brozo, & Simpson, 1985; Willows, Borwick, & Hayuren, 1981). According to North, Holsti, Zaninovich, and Zinnes (1963), content analysis research is most informative when instructional elements are categorized, counted, and then re-inspected through the lens of current theory and research.

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To analyze the 40 speed-reading books, we followed the general guidelines found in several major texts on content-analysis research (Berelson, 1952; Holsti, 1969; Krippendorff, 1980; Pool, 1959). The specific steps we followed were:

1. In a brainstorming session, a variety of possible instructional elements were generated and recorded.
2. Additional elements were added to the list after examining several available speed reading books.
3. The list was refined by collapsing similar elements with different names (i.e., "chunking" and "clustering") and by eliminating other elements not found in any of the books initially examined. Each decision concerning the list of instructional elements was made jointly by the authors.
4. Broad categories were imposed on the list to help group the elements. Text Factors included elements related to the layout of the book (i.e., glossary, preface, position of assessment checks, stated objectives and theoretical foundations of the book). Content Factors grouped elements related to information and instruction about how to increase reading speed (i.e., instruction in using pen/finger as pacer, increasing span of recognition, discussion of subvocalization).
5. As the content analysis proceeded, new elements were added when enough books provided information about a particular element not on our original list. For instance, instruction in using punctuation was found in several books and therefore became

an additional Content Factor.

Selection of Books

The books used in the content analysis were obtained principally from the authors' libraries and the university library. Additional books were acquired from graduate students. Every effort was made to include speed reading books from the Spring 1985 edition of Paperbound Books in Print. Those books with 1985 copyrights which we were unable to acquire from libraries were requested from publishers. The analysis process began in February of 1985; by May of that year, after analyzing a total of 40 books, the analysis was concluded.

For purposes of inter-rater reliability, a random list of ten books was exchanged by the researchers and re-analyzed. The level of agreement between the researchers on the ten books was 97%. A complete copy of the summary tables of the content analysis may be obtained from the authors.

The following sections focus on the results of the content analysis related specifically to information in each book regarding eye movements, span of recognition, and rates of reading users of the book might be expected to achieve. Table 1 summarizes the findings of our content analysis for these variables. Contiguous to these findings will be a discussion of relevant theory and research literature.

Insert Table 1 About Here

Eye Movements and Span of Recognition

Many of the speed-reading books contained information related to how the eyes move during reading and the amount the reader can see in a single fixation, or span of recognition. As shown in Table 1, 27 of the 40 (68%) speed-reading books analyzed provided methods for increasing the user's span of recognition, and 24 of the 27 (89%) offered related practice exercises.

There were 32 books that taught cluster reading. Of these, 23 (72%) indicated that three or fewer words could be read in a single fixation. Nine (28%) of these same books encouraged the user to expand recognition beyond three words. Ten of the 40 books (25%) provided instruction in reading large areas of print in a single fixation.

With the development of advanced eye-camera technology, researchers have determined that the anatomy of the eye limits the size of the visual region within which readers use information during fixations while they read. Haber and Hershenson (1980) and Homa (1983), for example, found that perceptual detail is degraded as close as one or two words from the fixation point. Other researchers have set the probable boundaries of the visual region from between one word and certainly no more than three words for even the best of college readers (Carpenter & Daneman, 1981; Carpenter & Just, 1977; Just & Carpenter, 1976; 1980; Taylor, 1965; Taylor, Frackenpohl & Petee, 1960). Various researchers using this same technology

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have corroborated findings that specifically set the span of recognition for advanced readers at between 3 to 4 letter spaces to the left to about 15 letter spaces to the right of the center of the fixation point (McConkie & Rayner, 1976; Pollatsek, Bolozky, Well, & Rayner, 1981; Rayner, 1983; Underwood & McConkie, 1985).

Taken together, this empirical evidence offers support for 23 (72%) of the 32 speed-reading books that encourage readers to process phrases of two or three words in a single fixation. On the other hand, the evidence strongly refutes the assumptions made in nine (28%, of the speed reading textbooks that the field of vision can be expanded to include clusters of more than three words. Even more suspect are books that include suggestions for processing entire lines and blocks of print in a single fixation.

Regressions

On the issue of eye regressions or the tendency for the eyes to move backwards and reread material, 27 (68%) of the speed-reading books provided some form of discussion (Table 1). Of the 27 books, 14 (52%) advocate the total elimination of regressions. Among these 14 books, 10 of them (71%) do not offer any practice exercises. Only 4 (15%) of the 27 books, moreover, indicated that regressions were useful in some cases.

While the habit of rereading information that is easily understood after reading it the first time is probably inefficient, any reader, no matter how skillful, will make

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regressions with unfamiliar or complex reading material (Harris & Sipay, 1985). In addition, students will reread and spend more time on text segments that are relevant to their goals (Allessi, Anderson & Goetz, 1979; Levin & Cohn, 1968; McConkie, Rayner, & Wilson, 1973; Rothkopf & Billington, 1979).

Research related to eye movements of good and poor readers reveal significant differences. Inefficient readers make more fixations (Lefton, 1979), have longer fixations, a greater number of regressions, and generally more erratic eye-movement patterns (McConkie, 1982). In spite of this evidence, the direction of the causal relationship between eye movements and inefficient reading remains controversial and unclear (Harris & Sipay, 1985; Pirozzolo, 1983; Rayner, 1983). Authors of a majority of the speed reading books in our analysis who recommend some form of eye movement training may be supposing that poor eye movements are the cause of slow, inefficient reading and suggest through their approaches that eliminating eye regressions and increasing span of recognition will improve the reading ability of poor readers. Techniques such as area reading (found in 25% of the books in the content analysis) in which the reader is taught to scan the page vertically to absorb large blocks of print at a time runs counter to well-designed studies of oculomotor reactions during reading. Researchers (McConkie & Zola, 1984; Tinker, 1965) have pointed out eye-movement patterns reflect exceptionally flexible reactions to very quick and minute changes

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brought about by the interaction of the text and perception and comprehension.

Upper Reading Rates

Accounts of astounding rates of speed for individuals who have received speed reading training continue to appear in the media (Pauk, 1984) and have been reported in the professional literature (Carver, 1985). Claims of speed readers reading at such rates as 2,500 words per minute (Wpm) (Schale, 1964; Wood, 1966), 1,500 Wpm (Adams, 1963; Brown, 1976; Stevens & Orem, 1963), 1,200 Wpm (McLaughlin, 1969) and 1,000 Wpm (Bower, 1970) are not uncommon. Even phenomenally high reading speeds such as 5,000, 50,000 and 100,000 Wpm have been attributed to certain individuals upon completion of speed reading courses (Homa, 1983; Van Gilder, 1963). Many of the speed reading books in our analysis suggested that users who practiced the techniques advocated could achieve extremely rapid rates of reading (Table 1). From a total of 28 books reporting upper speed limits, 16 (57%) proposed attainable rates above 1,000 Wpm, 12 (43%) proposed attainable rates of up to but no more than 1,000 Wpm.

What does research tell us about rates of reading? Are speeds in excess of 1,000 Wpm realistic limits? When the term reading is interpreted in the sense of comprehending most of the words on a page, it is impossible to read faster than 800 to 1,000 Wpm (Spache, 1962; Tinker, 1958). A much more conservative estimate of the upper rates of speed possible for good readers is

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calculated from eye movement research. Taylor (1965) found rates near 300 Wpm for good readers when regressions, span of recognition, duration of fixations, and comprehension were considered.

Carver (1985) recently studied reading speeds for a small sample of the most superior readers in the country. Based on his reading theory (Carver, 1981), which posits that reading involves an attempt on the part of the reader to process each word in a sentence in an effort to comprehend the author's intended message, Carver determined that superior readers read around 300 to 600 Wpm. This finding corroborates findings from other studies on speed by Carver (1982, 1983).

Homa (1983) studied the perceptual and comprehension skills of two graduates of the American Speedreading Academy who had putatively achieved rates exceeding 100,000 Wpm. Results of highly controlled experimentation indicated that the two speed readers were indistinguishable from normal readers in their perceptual speed and span of perception. On a text comprehension task, the speed readers achieved rates of between 15,000 and 30,000 Wpm, but failed a 20 item, multiple-choice test even after three readings. The author sarcastically concluded that the only noteworthy skill exhibited by the two speed readers was their remarkable rate of page turning.

The best empirical evidence we have today seems to place the limit at which even the most superior of readers can genuinely

read somewhere between 300-600 Wpm, and certainly no higher than 1,000 Wpm. Thus, the extraordinary reading rates which have appeared in the media and professional literature likely result from some sort of skimming or scanning technique which should be, according to Carver (1985), distinguished from genuine reading.

CONCLUSIONS AND RECOMMENDATIONS

Since the early part of this century, advocates of speed reading have been promulgating evidence and techniques for increasing the span of recognition, eliminating eye regressions, and ultimately developing readers who can achieve extremely rapid rates. Much of the evidence for speed reading, however, has been disparaged on the grounds that it derives from heresay, unsubstantiated testimonials, and research studies lacking scientific rigor. Through the use of recently developed sophisticated eye camera technology and as a result of well-designed empirical investigations, researchers have circumscribed a reader's span of recognition to little more than a couple of words and have set the upper rates of genuine reading in the range of 800 to 1,000 Wpm.

In light of empirical evidence, we recommend that authors of speed-reading texts reconsider some of their methods. If the number of words seen in a single fixation is three or fewer, practice exercises in reading large areas of print (entire lines or paragraphs) should be eliminated from future books. In

addition, since reading rates above 1,000 Wpm are questionable, we encourage authors of speed reading texts to help readers recognize the upper limits of "genuine" reading. Discussion and practice of skimming and scanning may be a more useful and meaningful students.

A majority of the speed reading books currently available promote some form of eye movement training as a means of improving reading speed and comprehension. Additionally, a large number of the books ($n=16$) claim that rates in excess of 1,000 Wpm are reasonable and possible. This apparent lack of sensitivity to well-grounded, empirical evidence also extends beyond speed reading books. Articles in professional journals continue to extoll the benefits of eye-movement training for increasing reading rate two, three, and four times current levels (Ambardar, 1984; Bergquist, 1984; Swalm & Kling, 1973). Support for these claims, such as "based on personal experience..." (Ambardar, p. 25) is not uncommon.

The intent of this content analysis was to determine the nature of the content in 40 speed-reading books and the extent to which the content is consistent with empirical evidence specifically related to eye movements and upper limits of speed reading. The value of this and any content analysis research is for the design and publication of quality material. In order to accomplish such a goal, a process of material development like the one proposed by Stahl, Brozo, and Simpson (1985) might be

employed where researchers, authors, reviewers, editors, and classroom instructors interact cooperatively. The process begins with researchers who have the duty of making known their findings as widely and understandably as possible. Authors should then use the most valid research findings in the construction of their texts. Reviewers can help ensure quality control by insisting that materials are based upon characteristics of effective speed reading instruction. Editors have the responsibility of producing a quality speed-reading program based on the results of rigorous scientific investigations instead of factors of marketability. Instructors are the ultimate evaluators in their role as daily consumers of speed reading books. They have the responsibility of providing on-going feedback about the materials' effectiveness to the publisher, who should then pass this information on to authors and other members of the material development team. We believe such cooperative teamwork is likely to help produce effective, research-sensitive speed-reading books and materials. As best we can determine from our analysis, there is still considerable work to be done to bring practices in line with available research evidence.

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TABLE 1
THE TREATMENT OF EYE MOVEMENTS, SPAN OF RECOGNITION,
AND RATES OF READING IN FORTY SPEED-READING BOOKS

Authors' Names	Expanding span of Recognition		> 3 words Reading Clusters in a single fixation* \leq 3 words (n=32)		Practice		Reading areas of print in a single fixation*		Practice		Discussion of eye regressions (n=27)		Totally eliminate		Useful in some cases		Practice		> 1000 wpm Reading Rates Reported (n=28)		\leq 1000 wpm	
	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice	Practice
Adams ('85)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Agardy ('81)																						
Baker ('53)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bean ('83)																						
Brown ('84)																						
Brozo, Schmelzer, Andrews ('84)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cutler ('72)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DeLeeuw ('65)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pink ('82)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gray ('70)																						
Herrick ('63)																						
Johnson ('73)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Judson & Schaill ('72)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Klaeser ('77)					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Larson ('71)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Laughter ('82)																						
Leedy ('63)																						
Lewis ('58)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Maberly ('66)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Nares ('67)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Markstein & Hirasawa ('77)																					x	x
Mayfield & Herlin ('82)																				x	x	x
Miller ('84)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Miller & Steeber ('85)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Payor & Schick ('81)																						
Sack & Yourman ('84)																						
Schaill ('67)																						
Sheftner ('73)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Smith, B. ('84)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Smith, N.B. ('70)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Spache & Berg ('58)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Spache & Berg ('66)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
The Reading Laboratory ('64)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wainright ('77)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Waldman ('81)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Webster ('65)																						
Wenick ('83)																						
Xerox Learning Systems ('70)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Young ('72)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zorn ('80)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

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Georgia State University

Technical Report No.

- 84-01 Brozo, W. G., Schmelzer, R. V., & Spires, N. A. A Study of Test-Wiseness Clues in College/University Teacher-Made Tests with Implications for Academic Assistance Centers. (ERIC No. ED 240-928)
- 84-02 Stahl, N. A., Brozo, W. G., & Henk, W. A. Evaluative Criteria for College Reading-Study Research. (ERIC No. ED 240-933)
- 84-03 Schmelzer, R. V., Brozo, W. G., & Stahl, N. A. Using a Learning Model to Integrate Study Skills into a Peer-Tutoring Program. (ERIC No. ED 256-244)
- 84-04 Brozo, W. G., & Stahl, N. A. Focusing on Standards: A Checklist for Rating Competencies of College Reading Specialists. (ERIC No. ED 248-762)
- 84-05 Stahl, N. A., Brozo, W. G., & Gordon, B. The Professional Preparation of College Reading and Study Skills Specialists. (ERIC No. ED 248-761)
- 84-06 Stahl, N. A., & Brozo, W. G. Vocabulary Instruction in Georgia's Postsecondary Reading Programs. (ERIC No. ED 248-759)
- 84-07 King, J. R., Stahl, N. A., & Brozo, W. G. Integrating Study Skills and Orientation Courses. (ERIC No. ED 248-760)
- 84-08 Brozo, W. G., & Schmelzer, R. V. Faculty Perceptions of Student Behaviors: A Comparison of Two Universities. (Not submitted to ERIC--See the Journal of College Student Personnel, Vol. 26, #3)
- 84-09 Henk, W. A., Stahl, N. A., & King, J. R. The Readability of State Drivers' Manual. (Not submitted to ERIC--please refer to Transportation Quarterly, 38(4), 507-520.)
- 84-10 Stahl, N. A., Henk, W. A., & King, J. R. Are Drivers' Manuals Right for Reluctant Readers? (ERIC No. ED 245-208)
- 85-01 Stahl, N. A., Hynd, C. R., & Henk, W. A. Avenues for Chronicling and Researching the History of College Reading and Study Skills Instruction. (ERIC No. ED 256-245)
- 85-02 Smith, B. D., & Elifson, J. M. Do Pictures Make a Difference in College Textbooks? (ERIC No. ED 256-246)

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- 85-10 Stahl, N. A., Henk, W. A., Brozo, W. G., & Sickelle, M. Developing Independent Learners: Strategies and Tactics for Mastery of Text (ERIC No. 263-536)
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